

FIVE ELEMENTARY TEXT-BOOKS OF  
HYGIENE

*A Manual of Health Science.* Adapted for Use in Schools and Colleges and suited to the Requirements of Students preparing for the Examinations in Hygiene of the Science and Art Department, &c. By Andrew Wilson, F.R.S.E., F.L.S. (London: Longmans, Green, and Co., 1885.)

*The Laws of Health.* By W. H. Corfield, M.A., M.D. (Oxon.). (London: Longmans, Green, and Co., 1880.)

*Principles of Hygiene.* Expressly Adapted to the Requirements of the Syllabus of the Science and Art Department, South Kensington. By Albert Carey, F.R.G.S. (London: Thomas Murby.)

*Hygiene.* Its Principles as Applied to Public Health. Adapted to the Requirements of the Elementary and Advanced Stages of the Science and Art Department, the Sanitary Examinations at the Universities, &c. By Edward F. Willoughby, M.B. Lond., San. Sci. Cert. Lond. & Camb. (London and Glasgow: W. Collins, Sons, and Co.)

*Hygiene: a Manual of Personal and Public Health.* By Arthur Newsholme, M.D. Lond. (London: Geo. Gill and Sons, 1884.)

THESE works are partly if not principally intended for the use of students of the Science and Art Department, South Kensington. It is very essential, therefore, that not only should the matter be put in a pleasant and readable form, but that there should be no serious errors, as students of elementary works cannot be expected to recognise errors as such, from any knowledge they may possess on allied subjects. In fact they, and many others besides, find a difficulty in conceiving that what is printed in a book need not necessarily be correct. It is also necessary that the chapters should be well arranged, with the matter well assorted under headings, and that nothing of importance should be omitted.

"A Manual of Health Science," by Andrew Wilson, F.R.S.E., F.L.S., cannot be said to be in agreement with the above principles. Many of the chapters are ill-arranged, and important points are omitted, especially in the chapter on Removal of Waste. It is not by any means free from errors, of which we may cite a few as specimens: thus on p. 20 it is stated that "the solids" of the gastric juice "amount to over 990 parts per 1000, the remainder being water;" if such were really the case, the juice instead of being a liquid like water, would be a solid of a very dense character. Again, on p. 80, "the cistern" for drinking water "becomes a necessary article of furniture in our houses on any system," whereas the chief advantage of a constant supply is that cisterns for drinking water are unnecessary. Again, at p. 91, it is stated that "each individual exhales about '6 cubic foot CO<sub>2</sub> per 24 hours" instead of per hour. At p. 112 we find that "propulsion draws foul air out, and aspiration drives fresh air in." There are several other misstatements, but the above will suffice. An unnecessary amount of space is devoted to soaps and hair-washes. The notice of a soap of a particular manufacturer in a work of this class is, we think, undesirable as having somewhat the character of an advertisement. The illustrations, which are numerous, are very good.

"The Laws of Health," by Prof. Corfield, M.D., is a very valuable little work, and although not originally intended to form a class-book for the Science and Art Department, is admirably adapted for this purpose. It contains nearly all that it is necessary to know in a very small compass, and bears throughout the impress of the high scientific attainments and practical knowledge of the author. The chapter on Small-Pox and Vaccination is especially good, and its arguments very convincing.

"The Principles of Hygiene," by Albert Carey, F.R.G.S., is only of use for the first or elementary stage in Hygiene of the Department, although it is not so stated in the preface. The book is without illustrations, a great drawback to elementary students; and a good deal of space is devoted to matters of only secondary importance. It is therefore but moderately suited for the class of readers for whom it was written.

"The Principles of Hygiene," by E. F. Willoughby, M.B., S.Sc.C. Lond. & Camb., is intended for the use of students of all three stages of the Science and Art Department. It is also very well suited for the preparation of candidates for the University Examinations in Public Health. We can speak highly of this work, which contains sound and useful information on every subject necessary for the above courses, and is well up to the latest improvements and most generally received opinions in the science of which it treats. In our opinion it is perhaps better adapted for the advanced and honours students than for the elementary, as some parts intended for the latter are somewhat needlessly complex. The chapter on Vital Statistics is likely to be extremely useful to the University candidates, this somewhat difficult subject being here ably and intelligently treated.

"Hygiene, a Manual of Personal and Public Health," by A. Newsholme, M.D. Lond., is very well suited for students in the elementary and advanced stages. They will find here all that they require to know in an easily assimilable form. We do not, however, agree with Dr. Newsholme in thinking the "Banner" system of drainage one to be recommended, and our opinion coincides with that of several practical sanitarians. In every other respect the subject is ably treated by the author, and his work deserves a wide circulation amongst the science teachers of the country.

OUR BOOK SHELF

*Euclid, Book I.; with Notes and Exercises for the Use of Preparatory Schools and Candidates preparing for Naval Cadetship and Sandhurst Preliminary Examinations.* By Braithwaite Arnett, M.A. (Cambridge: Deighton, 1885.)

As the examinations for which this work is intended to prepare pupils rigidly require what are called Euclid's proofs we have here merely an edition mainly on the lines of Simson's text. This text is so presented that the pupil may see how to write out his "props" in such a way as shall please the examiner. Everything is done that can be done by another to secure success. That the pupil may not be physically incommoded more than is absolutely necessary the text is so printed as to involve the minimum of exertion.

On the sinister page of the open volume behold the text printed as the dreaded examiner desires to see it broken up, each new step in the reasoning claiming a fresh line, the figure correctly drawn (a really important

matter), and to every page its own private "prop." These are merits which the editor can rightly appropriate to himself (which he does in his Preface).

On the dexter page, *in ordine longo*, come the "references," saving the pupil the horrid nuisance of turning back (as he lies prone on the ground) to see what "def. 15" is, and this kind (?) action is carried on to Prop. 48. So that if this one definition had obtruded itself into each proposition, it would have been printed forty-eight times and ever would it have greeted the student with a cheery "Here we are again!"

But this is a fault—unless all the first book could be printed on one side of a not too unwieldy page—which Mr. Arnett's book must be content to share with our "Revised Bible" references to such words as "slave" for the A.V. "servant."

Below the "references" come a very copious collection of riders. We have looked at the ludicrous side of matters, but it would be doing Mr. Arnett a very great injustice if we confined our attention to all the conveniences he has got together to ease the work of this class of students, of whom (*horres cinus referentes*) we have had experience in time past, in getting up this particular subject.

Throughout there is plenty of judicious explanation and illustration; the theorems are grouped in sections of subject-matter, as direct and converse theorems, so are the problems in sections, and there is a genealogical chart for the first twenty-six propositions. In fact nothing is scamped.

To return to the dexter page, the riders are exceedingly varied and well-grouped, and are calculated to draw out the intelligence of a thoughtful pupil if such an one uses the book.

If the first book of the glorious "Elements" must be edited at such length, we commend Mr. Arnett's edition to those who require such "props" as are here supplied, feeling convinced that if they cannot master the "props" with them, then the study of geometry is not their proper work.

*Botany. A Specific Subject of Instruction in Public Elementary Schools.* By Vincent T. Murché. (London: Blackie and Son, 1885.)

THE preface to this little volume states that "the three books which form this series are emphatically children's books, and not text-books for South Kensington students." As long as the author confines himself to that part of the science which is, in our opinion, best adapted to the mind of a child, his "chatty, experimental method" may very probably gain the attention of youthful readers. The first forty-eight pages, which he devotes to external morphology, are unpretentious and successful. We may well wish that the author had confined himself to external morphology; but he launches out into anatomy and physiology—branches of the science which are ill-adapted at best to the mind of a child; in this middle section of the book his success leaves him when he states that "the epidermis of the orange consists . . . of a thick peel;" that "there is in every plant . . . a peculiar vital fluid which is the source of all its solid parts;" this, we are told, is found in spring "in an active state between the bark and the wood. In this condition it is called *cambium*!" It is also stated (p. 58) that the cells of the pith "form the channel by which all the fluids absorbed by the roots are carried upwards towards the leaves and flowers," while the part played in the transfer of fluids by the lignified walls is systematically ignored, and it is expressly stated on p. 78 that "there can be no passage of fluids up or down, except by the process of osmosis." When the author leaves this part of the subject, on which he is, to say the least, not very sound, his success again returns: he describes simply and clearly the chief characters of the flower and fruit; but

concludes with a condensed and not very satisfactory treatment of some of the lower forms of vegetable life.

It is unfortunate that a book, parts of which might prove so useful, should be disfigured by serious blunders; why should not the proof-sheets, in cases like the present, be submitted to some competent authority, who would easily sift out the grosser errors? F. O. B.

*Journal of the Royal Agricultural Society of England.* Second Series. Vol. 21, Part I. (London: John Murray, 1885.)

THIS journal fully maintains the high character it has acquired under the able editorship of Mr. H. M. Jenkins. The part under notice is a bulky volume of nearly five hundred pages, and includes some eight or ten original papers by well-known agricultural writers, besides the always valuable annual reports of the entomologist, chemist, and botanist to the Society. Prof. Wortley Axe reports on a recent outbreak of abortion in Lincolnshire ewe-flocks, and Prof. Robertson on anæmia in sheep. Mr. S. B. S. Druce, Barrister-at-Law, has a significant paper on the alteration in the distribution of the agricultural population of England and Wales between the returns of the census of 1871 and 1881. Dr. J. H. Gilbert, F.R.S., contributes a sympathetic memoir of the late Dr. Augustus Voelcker, the paper being accompanied by a graphic portrait. Sir J. B. Lawes, F.R.S., writing on sugar as a food for stock, concludes that even at its present low price, sugar does not appear to be an economical substance to use when brought into comparison with other foods which are available to the farmer. Mr. H. Ling Roth writes on Franco-Swiss dairy farming, and Mr. W. Little on the agriculture of Glamorganshire, while the longest contribution to the current part is the first instalment of a report on Canadian agriculture, by Prof. Fream. The author confines his remarks chiefly to the prairie region of British North America, and after discussing the physical and geological features of this vast region, the character of its soils, the composition and value of its native herbage, and the peculiarities of its climate, he proceeds to give an exhaustive description of the agriculture of Manitoba and the North-West Territories, and concludes with an expression of his opinions as to the probable future of prairie farming. The moderate and impartial spirit in which this paper is written will enhance its value to readers on both sides of the Atlantic, and lead them to look forward to the publication of the second part, in which it is proposed to deal with the agriculture of the Eastern Provinces of the Dominion. In the course of his inquiries, Prof. Fream appears to have discovered in "goose wheat" a novelty both of botanical and agricultural interest. This part of the *Journal* also contains a report on the field and feeding experiments at Woburn, by Dr. J. Augustus Voelcker, in which the author gives evidence of the same attention to accuracy and matters of detail as were so eminently characteristic of his late father, to whose vacant post as consulting chemist to the Society he was recently elected by the Council.

#### LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

#### "An Earthquake Invention"

WITH reference to the correspondence on this subject in this week's *NATURE* (vol. xxxii. p. 213), will you permit me to state that the gentleman to whose paper in the British Association Report for 1884 Prof. Piazzzi Smyth refers has long been a